» Revision: Term 3 Preliminary Exam

The upcoming exam will test your understanding and knowledge of information systems in general, analysing, storing & retrieving, processing and transmitting & receiving. To assist in preparation, answer the following questions – always give complete sentences and aim for the fullest explanation possible.

» Analysing

1. Who decides whether data is information or not? Why?

2. Give examples of how data is different once it has been analysed and made into information.

3. Name the 7 types of analysis and give an example of each.

4. Give examples of data that are analysed by those who do not own it, and describe the social & ethical issues raised by such a situation.

5. Define an information system. Give an example in the form of a system diagram showing its purpose, participants, data/information, information technology and its information processes, giving examples of the kind of analysis that might take place in this particular system.

» Storing & Retrieving

1. What are the three main purposes for storing & retrieving data?

2. Name 2 devices/media used for storing & retrieving and explain:
    a. How they physically function
    b. What their main purpose is
    c. What particular characteristics they possess that suit them for this purpose

3. Distinguish between portable, local and network storage.

4. With regard to storing & retrieving technology, what do *permanence, accessibility* and *volatility* refer to? Give examples of hardware that represent the different possibilities for each.

5. When software is said to *archive* and *protect* data, what is the software actually doing to the data?

6. Describe the means by which data can be secured and protected from theft.

» Processing

1. What distinguishes Processing from the other processes?

2. Name the device that controls all of a computer's processing operations, list its parts, and describe the purpose of each of those parts.

3. Briefly define *centralised* and *distributed* processing, and summarise the advantages offered by each.

4. Many pieces of software for organising and analysing data also offer features for processing that same data. For two different file types, give examples of software that have all these features, and give distinct examples of each (i.e. ways that each piece of software organises and analyses data, and ways that each piece of software processes data – they are different!).

5. At the present, image-processing software that can falsify photographic evidence is freely available to the public. Evaluate the benefits and drawbacks to this situation and justify whether such software should continue to be available or if it should be withheld from the general public.

» Transmitting & Receiving

1. Give 5 completely different examples of pairs of places where data can flow between.

2. Define the following and provide examples of where each occur:
    a. Serial data transmission
    b. Parallel data transmission
    c. Simplex data links
    d. Duplex data links
    e. Asynchronous communication links
    f. Synchronous communication links

3. Explain the function of a modem and why they are needed when communicating over telephone lines.

4. Describe as many differences as you can between a Local Area Network and a Wide Area Network (apart from the words *local* and *wide*, of course!).

5. You are in charge of designing the transmitting & receiving infrastructure for a company's computer network. Explain the technological, social & ethical issues that could arise and describe how you would effectively manage them.